

ABSTRACT

Two experiments were conducted to assess the effect of lupin grain (*Lupinus angustifolius*; LUP) on milk characteristics of Awassi ewes, nutrient intake and digestibility and body weight of suckling lambs. Same diets were offered to the different groups of animals in both experiments. Dietary treatments contained no LUP (CON) or 200 g/kg LUP (LUP200) of dietary dry matter (DM) in substitution part of soybean meal and barley grain. Twenty-four Awassi ewes with initial body weight (BW) of 63.5 ± 2.19 kg were selected for the first experiment and randomly assigned to one of the two dietary treatments (12 ewes/diet). Nutrient intake was measured daily of the experiment. Body weight and milk yield were recorded on days 0, 14, 28 and 56 of the study. Twelve Awassi lambs (BW = 35.3 ± 0.75 kg) were used in the second experiment (6 lambs/diet) to assess the effect LUP addition on nutrient digestibility and N retention balance. In experiment 1, intake of acid detergent fiber was higher ($P < 0.05$) for lambs offered LUP diet with no differences observed in the other nutrients. Weaning BW, total gain and average daily gain was greater ($P < 0.05$) for suckling lambs with their dams offered the LUP diet compared with the CON diet. Greater milk yield ($P < 0.05$) was observed for ewes fed LUP vs. ewes fed CON diets. Milk protein, lactose, and total solids content were greater ($P < 0.05$) in the LUP compared with the CON diet. In experiment 2, digestibility of crude protein and neutral detergent fiber was greater ($P < 0.05$) for lambs fed diets containing LUP. Retained N (g/d) and N retention percentage was greater ($P < 0.05$) for lambs consumed diet with LUP compared with CON diet. Therefore, the addition of sweet lupin grain improved milk characteristic of ewes and pre-weaning growth of their lambs, nutrient digestibility and N balance as well as it decreased the cost of diets.